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Legal Aspects of Space Station Utilization[1]

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Currently, the first two modules of the International Space Station (ISS) are in orbit. The Russian Service Module will soon be added, to be followed by the U.S. Laboratory module. If current near-term plans are accurate, sometime in the first half of 2000, the ISS will be inhabited and long-term research will be ongoing. Once operations begin, numerous legal questions will arise relating to, for example, the permissible scope of on-board activities, the conduct of the crew, and the protection of intellectual property onboard the station. The purpose of this paper is to review some of the materials related to the ISS and discuss how the Space Station will be operated and the identified issues will be addressed. It will also discuss the actions NASA is taking, as the ISS participating agency for the United States, to encourage and facilitate commercial activities on the Space Station.

The foundation document for the International Space Station Program is the Inter-Governmental Agreement (IGA).[3] Even a cursory reading of the IGA reveals that utilization of the ISS was a priority topic for all partner states. First, it is explicitly stated that each Partner retains jurisdiction and control of the Space Station elements that it provides and registers.[4] Independent rights of each Partner to manage its own program, including its ISS utilization activities, are contained in Article 7.[5] This right is expanded upon at length later in Article 9 of the IGA.[6] Specifically, Article 9.1 states that utilization rights for the ISS derive from the provision by the Partners of ISS elements and that providers of infrastructure, (*e.g.*, power,

[2] The views expressed herein are those of the author and may not reflect the views of the National Aeronautics and Space Administration or of the United States of America.

[3] Agreement Among the Government of Canada, the Governments of Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of the United States Concerning Cooperation on the Civil International Space Station, January 29, 1998.
[4] IGA, Article 5, Registration; Jurisdiction and Control.
[5] IGA, Article 7, Management.
[6] IGA, Article 9, Utilization.

communications, and life support), receive a right to utilize a fixed percentage of the utilization elements, (*e.g.*, laboratories), that are provided by other Partners. The capitalistic, free market nature of ISS operations within the user elements is guaranteed by Article 9.2 which permits the Partners to barter or sell their respective allocations of utilization or resources on whatever terms and conditions that are acceptable to the parties to the specific transaction.[7] Limitations on this barter and sale are few; a Partner may use and select users for its allocation "for any purpose consistent with the object of the IGA,"[8] subject only to a requirement to obtain consensus for the use of the ISS by a non-partner[9] and to ensure that the provider of a user element agrees that the proposed use of its element is for peaceful purposes.[10]

The portions of the IGA discussed above give broad and reasonably unfettered rights to the Partners to use or sell their allocations of on-orbit resources as they see fit. Those provisions evoke an image of a seamless operation within the Space Station, one where crew members of varying nationalities are performing work for a range of sponsors in multiple flight elements. It is this feature of ISS operations that causes some to question the feasibility of performing sensitive, proprietary research on the Station. The ISS documents address several permutations of this concern at some length. For example, Article 13 of the IGA provides the commitment of each Partner to respect and protect proprietary rights in and the confidentiality of utilization data passing through the communication systems of the Station.[11] In Article 12, this concept is also applied to protection of data and goods transported on a Partner's space transportation system.[12] Further, while Article 11 establishes that each Partner has the right to provide qualified crew members to serve on an equitable basis, each Partner has the explicit responsibility to ensure that its crew members comply with a Code of Conduct that has been developed and approved in advance.[13] At the current time, the Code of Conduct is in draft and is under discussion by the ISS partnership. While not all the issues surrounding the Code of Conduct have been universally resolved, the section dealing with confidential information is non-controversial and despite possible minor changes in wording, the basic philosophy will, in all likelihood, be reflected, unchanged, in the final document. Specifically, this section requires crew members to use confidential data obtained in the course of performing their duties for official purposes only.[14] Later in the same

[7] IGA, Article 9.2, "The Partners shall have the right to barter or sell any portion of their respective allocations. The terms and conditions of any barter or sale shall be determined on a case-by-case basis by the parties to the transaction."

[8] IGA Article 1.1, "The object of this Agreement is to establish a long-term international cooperative framework among the Partners, on the basis of genuine partnership, for the detailed design, development, operation, and utilization of a permanently inhabited civil international Space Station for peaceful purposes, in accordance with international law."

[9] The purpose for this requirement is to avoid a situation where a Partner sells its allocation or a portion of its allocation to a state or entity controlled by a state that is objectionable to the partnership.

[10] IGA, Article 9.3(a) & (b).

[11] IGA, Article 13.4, "…[e]ach Partner shall respect the proprietary rights in, and the confidentiality of, the utilization data passing through its communication systems…when providing communication services to another Partner."

[12] IGA, Article 12.4, "Each Partner shall respect the proprietary rights in and the confidentiality of appropriately marked data and goods to be transported on its space transportation system."

[13] IGA, Article 11, Crew.

[14] Draft Crew Code of Conduct, Section IV, paragraph 1. Physical and Information Security Guidelines. "Information obtained by an ISS Crew Member in the course of performing his or her duties

section, this thought is synopsized and reiterated: "[t]he use and disclosure by ISS Crew Members of any data or goods, including in particular, proprietary or export controlled data or goods, shall be limited to those purposes necessary for the performance of assigned ISS Crew Member tasks."[15]

The ISS documents cited above discuss the duty to protect another Partner's data and goods from several different perspectives. The most direct and straightforward discussion of this topic appears in yet another section of the IGA, in Article 19, Exchange of Data and Goods. This Article establishes a five part procedure to protect sensitive data. First, Article 19.3 provides that all transfers of technical data and goods are "subject to the restrictions set forth in this paragraph."[16] Second, the furnishing agency must mark specifically any data or goods that are to be protected for export control purposes.[17] Third, the furnishing agency must mark with a notice any technical data to be protected as proprietary, including any specific conditions regarding the use of the data or goods by the receiving agency.[18] Fourth, each Partner agrees to take "all necessary steps" to ensure that marked data or goods it receives are treated in accordance with the markings on them.[19] Finally, the Article completes the protective screen by explicitly providing that withdrawal from the ISS Agreement by a Partner "shall not affect rights or obligations regarding the protection of technical data or goods transferred under this Agreement prior to such withdrawal."[20]

In short, the IGA establishes a thorough and extensive system of agreements and procedures to ensure that each ISS Partner is free to use its allocations of resources on board the Space Station for any purposes consistent with the partnership, while also recognizing each Partner's need to ensure that certain information is protected even if used in the open and seamless environment of the Space Station.[21] This set of agreements and understandings was negotiated, in large part, to make commercial activity on board the Space Station feasible. All Partners are actively pursuing commercial development utilizing the ISS. Nowhere is that more obvious than in the United States. To start with, based on the U.S. share of the overall program investment, the U.S. has the right to use about 75% of the total resources of the ISS, exclusive of the Russian segment. NASA, as the manager of the U.S. allocation of ISS resources has committed to use at least 30% of the U.S. share, or more than 20% of the total station utilization potential, in support

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that is proprietary, confidential, or otherwise not generally available to those outside the Cooperating Agencies and their contractors shall only be used for official purposes and shall not be used to further private interests or for the benefit of a business or other entity in which the ISS Crew Member has a financial or other interest."

[15] Id., paragraph 3.

[16] IGA, Article 19.3

[17] Id., Article 19.3(a)

[18] Id., Article 19.3(b)

[19] Id., Article 19.4

[20] Id., Article 19.6

[21] In addition to the multilateral IGA, each Partner has also signed a bilateral Memorandum of Understanding (MOU) with NASA containing a more detailed description of its contribution to the ISS program. The MOUs have some provisions that are similar to the IGA provisions discussed above and which describe the detailed mechanisms for managing the commitments made in the IGA. In turn, the MOU provisions are implemented through various management mechanisms and documents described in the MOUs. One such document is the Utilization Management Plan and its attachment, the "Space Station Freedom Procedures for the Protection of User Intellectual Property." Since the MOU provisions and implementing documents amplify, but do not change any of the IGA provisions, they are not separately discussed in this paper.

of U.S. commercial uses. This is an unprecedented level of commercial space activity, and while we are determined to find these commercial users, we do not yet know exactly who they are or what they will do, although a significant number will come from our 20 or so Commercial Space Centers. Therefore, for the rest of this paper, I wish to discuss what we in NASA are doing to encourage and support the eventual U.S. commercial users of the ISS.

Just about one year ago, Congress passed the Commercial Space Act of 1998.[22] In this legislation, Congress declared that a "priority goal of constructing the International Space Station is the economic development of Earth orbital space."[23] To monitor the progress of efforts to achieve such economic development, NASA was required to produce several reports identifying, *inter alia,* opportunities for commercial providers to play a role in ISS activities, and specific policies and initiatives the NASA Administrator is advancing to encourage and facilitate those commercial opportunities.[24] In response to this congressional direction, NASA released and sent to Congress a "Commercial Development Plan for the International Space Station."[25] This "plan" was, in fact, more of a strategic blueprint, and set out NASA's short term and long term goals for ISS commercialization efforts. The short term goal was to "begin the transition to private investment and offset a share of the public cost for operating the space shuttle and Space Station…." The long term goal was to "establish the foundation for a marketplace and stimulate a national economy for space products and services in low-Earth orbit.…"

To accomplish either of these goals more information was needed, and NASA set out to gather and analyze the necessary data. First, NASA turned to a recently conducted internal study, "Potential Pathfinder Areas for Commercial Development of the ISS."[26] This study concluded there were commercial opportunities across the entire scope of the ISS program: specifically, in use of the Space Station for commercially sponsored R&D, in commercial operation and servicing of ISS infrastructure, and in development of new capabilities to augment the ISS. It soon became clear, however, that more definition was necessary. The public nature of the commercialization effort sparked several entities to submit unsolicited proposals for a wide range of activities. Some of these proposals are identified in the pathfinders study, and their topics range from cutting edge research in space to transportation of memorabilia to space to promote higher cost resale. In addition, some proposals aimed at creation of new commercial products and markets, while others were simple attempts to get NASA contracts for goods and services.

The spectrum of inputs that was being received by NASA caused a refinement of its goals. As reported to Congress in part one of its three-part report in response to P.L. 105-303,[27] NASA distinguished between "unsolicited proposals"[28] and

[22] P.L. 105-303 (October 28, 1998)
[23] Id., Section 101(a)
[24] Id., Sections 101(b)(1)(A)&(D)
[25] Final Draft, 16 November 1998

[26] Discussion Draft, October 1998, found as Attachment 1 to the Commercial Development Plan for the International Space Station.
[27] Daniel S. Goldin letter to the Honorable F. James Sensenbrenner, Jr., May 14, 1999, Enclosure 1, NASA Report on Opportunities for Commercial Providers on the International Space Station. *See,* note 24, *supra*
[28] "A written proposal for a new or innovative idea that is submitted to an agency on the initiative of the offeror for the purpose of obtaining a contract with the Government, and that is not in response to a request for proposals."

"entrepreneurial offers."[29] Essentially, unsolicited proposals seeking to provide goods and services under contract were recognized to be familiar documents, the treatment of which was already covered by the provisions of the Federal Acquisition Regulation (FAR).[30] Entrepreneurial offers, on the other hand, were seen to be more unique and more squarely in line with the congressional vision for commercial space development. Therefore, the focus of the ISS commercialization efforts was narrowed to concentrate on and encourage the more innovative offers, leaving unsolicited proposals to be handled in accordance with established FAR procedures.

Using these definitions, NASA has to date received over a dozen ISS commercialization proposals, all proprietary. A few were determined to be unsolicited proposals for goods and services that the ISS program needs. These have been referred to the procurement organization and the ISS program. Most of the proposals have been classified as entrepreneurial offers, with a bit more than half involving potential uses of space imagery, and several dealing with collectibles merchandising. Since, if you recall, the definition of entrepreneurial offers specified that the purpose of the offer was to create "value-added products or services,"[31] this last class of offers has been given a lower priority than the others. Finally, in addition to the proposals mentioned already, NASA has received a few other offers specifically involving the use of the ISS to conduct significant R&D. These, a subclass of entrepreneurial offers, are also a high priority to NASA.

In the discussions to date, certain issues have arisen repeatedly as the largest barriers to completion of a "deal." For obvious reasons, one of the biggest issues is the price charged to use the ISS. The ISS is a multi-billion dollar facility and, in its initial phase, at least, you get there by riding on the Space Shuttle, another very expensive piece of equipment. Under the normal rules, a U.S. Government agency which permits a person or entity to use a Government facility or provides support to such a person or entity, must charge a user fee that is equal to the full, burdened cost of the use or support.[32] The goal of this policy is three fold: (1) to ensure that Government sales of goods and services are self-sustaining; (2) to promote efficient allocation of the Nation's resources by establishing charges that are at least as great as the costs to the Government; and (3) to allow the private sector to compete with the Government without disadvantage.[33]

While the requirement to charge full cost is the general rule applied to user charges, it is not absolute. Different amounts can, and indeed must, be charged if so provided by other statutes.[34] NASA does have available a statute that permits recovery of less than full cost; it is found in 15 U.S.C. § 5807, Use of Government Facilities. Under this statute, the Administrator of NASA may permit non-Federal entities to use space-related facilities on a reimbursable basis if there is a determination the facilities will be used to support commercial space activities and that such commercial use can be supported by existing resources and will not interfere with Federal uses.[35] The amount of

[29] "A written offer for a new or innovative idea, involving ISS assets, that is submitted to NASA on the initiative of the offeror for the purpose of creating value-added products or services for sale in private markets, and that is not in response to a request for proposals."
[30] FAR, Subpart 15.601.
[31] Note 29, *supra.*
[32] OMB Circular A-25, User Charges.
[33] Id., Section 5.
[34] Id., Section 4.b.
[35] 15 U.S.C. § 5807(a).

reimbursement for such use of a space-related facility "may" be an amount equal to the direct costs, including salaries, incurred by the United States as a result of the use of its facilities by the private sector.[36] This statute is a help, but in light of the start up nature of ISS commercial activity, combined with the facts that a single shuttle flight costs on the order of $480 million and that no pricing structure for the $22 billion Space Station has yet been developed, it is fair to say that even a requirement to pay direct cost for use of the ISS and the shuttle as a transportation system is a serious disincentive for a start up business.

In addition to the issues of cost, it became apparent after discussions with the first ISS commercial offerors, that there was some uncertainty over NASA's basic authority to enter new, commercial arrangements. While NASA felt its Space Act and other authorities were clear and broad enough to easily support the intended effort,[37] the effort to assemble the total array of NASA authority which could be used to support commercial space activities requires reference to multiple statutes in different titles of the United States Code.[38] This was enough to make many private sector entities, particularly those who were not from the traditional aerospace sector, nervous. To address this situation, NASA decided to seek specific legislation which would serve the triple purpose of demonstrating the Administration's and Congress' commitment to commercial space activity on the ISS, putting the necessary authorities in one place for all to see, and expanding NASA's authority concerning assessment and collection of user charges.

As a result, on July 27, 1999, the NASA Administrator, with the blessing of the Office of Management and Budget, forwarded to Congress a new legislative proposal, authorizing the "Space Station Development Demonstration Program."[39] As stated in the forwarding letter, the proposed legislation responds to the direction in the Commercial Space Act of 1998 that NASA suggest new policies and initiatives intended to encourage and facilitate commercial uses of the ISS. The new legislation establishes a commercialization demonstration program, limited to the ISS, that applies to agreements entered into and private projects initiated before the earlier of ISS "assembly complete," or the end of fiscal year 2004.[40]

Essentially, the proposal is to establish a demonstration program consisting of a very flexible price structure, with the possibility for NASA reinvestment of receipts under the program for use in promoting "increased United States economic development of Earth orbital space utilizing the International Space Station."[41] Overall, there are four critical elements to the proposal. First, the legislation envisions a market-based price

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[36] Id., §5807(b)(1).

[37] Section 203(c)(5) of the Space Act (42 U.S.C. § 2473 (c)(5)), expressly authorizes NASA "to enter into and perform such contracts, leases, cooperative agreements, or other transactions as may be necessary in the conduct of its work and on such terms as it may deem appropriate, with any…person, firm, association, corporation or educational institution."

[38] A typical agreement could require invocation of the Space Act in Title 42, the facility use statute in Title 15, patent provisions from Title 35, Cooperative Research and Development Agreement authority from Title 15, NASA contract authority under Titles 10 and 41, and the financial controls in Title 31. With this many statutes involved, some skepticism over the seamlessness of the entire package may be forgiven.

[39] Letter from Daniel S. Goldin, Administrator, to The Honorable Al Gore, President of the Senate, July 27, 1999.

[40] Proposed legislation, Section 108(i).

[41] Id., Sections 108(e) & (f).

structure with a marginal cost floor for the commercial use of resources, accommodations, transportation services and related infrastructure of the ISS.[42] This authority would permit flights to and from the ISS as well as use of the ISS at rates generally lower than otherwise allowed by statute and regulation.[43] In addition, for especially valuable commercial "primary uses" of the ISS, *i.e.*, "research, development, and product generation in the unique environment of space, and education,"[44] the Administrator has the authority to waive all or part of the marginal cost during the formative period of the commercial endeavor.[45] This added waiver authority is temporary, allowing deferral of marginal cost recovery only until the commercial enterprise matures to a profitable business operation.[46] Since such a waiver is a major benefit to a potential user, it is limited to those engaged in the primary uses of the ISS. It would not, for example, be available to those who wish to create commercial value by adding novelty to items such as coins or stamps by simply flying them to space and back.

The final major aspect of the proposed legislation that needs to be discussed is the ability of NASA to reinvest its receipts from the program to offset program costs and to promote increased commercial uses of the ISS. Generally, if a Federal agency receives revenue, whether from reimbursement or otherwise, it is not permitted to keep the money—it must turn it over to the Department of Treasury for deposit into the "General Fund."[47] This statute is a basic expression of Congress' fiscal control of the executive branch, the effect of which "is to ensure that the executive branch remains dependent upon the congressional appropriation process."[48] Congress is, however, willing to forgo some measure of this control when a public purpose is to be served and Government funds can be saved. The mechanism to implement such a change is a specific statutory exception, and Congress has been somewhat open to limited exceptions when properly justified. Thus, in recent years, the Departments of Interior and Agriculture have received authority to retain user fees for use of national parks and use the funds to improve the parks;[49] agencies generally can take advantage of the Stevenson-Wydler Technology Innovation Act, 15 U.S.C. § 3701, *et seq.*, to retain royalties from licensed technologies and use the royalties to pay for other R&D; and the Department of Agriculture is poised to obtain authority to collect fair market value for timber products harvested and use the funds to pay the costs of the Department's timber and forest related activities.[50]

In NASA's case, the rationale is similar to those used by the cited exceptions. The financial risks of commercial space activities are significant and real, but the potential rewards are significant as well. The ability to retain and use reimbursements is the flip side of the ability to waive cost recovery. It makes sense to encourage entry into this new, untried market by cutting costs, but when an enterprise becomes successful, it also makes sense to use the

[42] Id., Section 108(e)(1).
[43] *See*, notes 32 to 36, *supra*, and accompanying text.
[44] Proposed legislation, Section 108 (h)(1).
[45] Id., Section 108(e)(3).
[46] Id.
[47] 33 U.S.C. § 3302(b). "[A]n official or agent of the Government receiving money for the Government from any source shall deposit the money in the Treasury as soon as practicable without deduction for any charge or claim."
[48] United States General Accounting Office, Principles of Federal Appropriations Law, Second Edition, 1992, chapter 6.E.2.a(1), page 6-107.
[49] P.L.104-134, Section 315.
[50] S.1292, FY2000 Appropriations Bill for the Department of Interior.

market-based revenue coming from that company to support other, less established endeavors. In short, the purpose of the statute is to jump start a commercial space industry on the largest and most expensive piece of permanent space infrastructure ever created, the International Space Station.

While the legislative proposal currently pending before Congress is one of the more unusual things that NASA is doing to promote commercial space on the ISS, it is by no means the only one. In addition, NASA is addressing concerns of potential agreement partners by defining a process to review and respond to entrepreneurial offers. This process will create a single point-of-entry into NASA for those with plans for potential commercial space activities. This process will also put some level of predictability into the system and ensure that a proposal is not only reviewed and dispositioned efficiently, but also leaves an auditable trail that can be examined to demonstrate the system is fair and effective.

On a smaller scale, it has become apparent that issues of intellectual property and data rights are seen as very important factors in concluding any agreement for commercial use of the ISS. It also has become clear that many potential entrepreneurs are unaware of the detailed network of laws and regulations that affect the ability of a Government agency to make certain agreements regarding the disposition of intellectual property. Therefore, to facilitate and accelerate the agreement process, and as reported to Congress in response to the Commercial Space Act,[51] my office is assembling a reference guide for potential agreements partners and their counsel. Tentatively entitled "Intellectual Property and the International Space Station: Creation, Use, Transfer, and Ownership and Protection," it is intended to lay out the matrix of agreement provisions, statutes, regulations and policies that impact NASA's approach to intellectual property. Although this document will not and was not intended to be the ultimate textbook on ISS related intellectual property, I hope it will provide enough background to permit potential agreement partners to come into negotiations with a realistic understanding of what is possible in this vitally important area.

The final activity that I wish to mention concerning NASA's current activities related to ISS commercial activity is the possible creation of a non-governmental organization (NGO) to manage the U.S. utilization share. The concept of having an NGO managing U.S. utilization of the ISS was part of the original Commercial Development Plan for the International Space Station.[52] As set forth in that document, the vision for the NGO was to "develop the low Earth orbit environment for all users (scientific, technological, and commercial), in order to more efficiently advance scientific knowledge, technological capability, and commerce on Earth as a gateway to 21st Century exploration and development of space."[53] The concept is to get the Government out of the planning and coordination of ISS utilization to the maximum extent possible in order to reduce the cost and schedule of ISS operations and to revolutionize the approach to ISS utilization through "increased academic cooperation and industrial collaboration."[54] Overall, this is not a totally new concept. The Hubble Space Telescope (HST), another large piece of in-space infrastructure, is operated by the non-governmental Hubble Space Telescope Science Institute. This

[51] *See*, note 27, *supra.*

[52] Note 25, *supra*, Tactic 4.
[53] Id., attachment 3, VISION.
[54] Id., GOALS.

organization, without interference from NASA, conducts peer reviews, schedules telescope operations, and operates the telescope. Without question, the Institute has been a great success, optimizing telescope use while keeping high levels of scientific merit in its observations. The question now under scrutiny is whether a similar or analogous arrangement would work for ISS utilization.

The distinctions between the HST and the ISS should not be underestimated. The HST is a robotic facility, owned by the United States (with a 20% utilization share allocated to ESA in return for program participation), that is used exclusively for scientific research. As such, established peer review practices are well understood and effective. The ISS, however, is a multinational inhabited facility, that, as shown in the beginning of this paper, has a very complex and thorough management mechanism. This arrangement attempts to let each Partner utilize its allocation of resources as it sees fit, subject to a general agreement to "seek through the mechanisms established in the MOUs to avoid causing serious adverse effects on the use of the Space Station by the other Partners."[55] Whoever or whatever does the utilization management, it will require a balancing of interests of many Partners, as well as coordination of efforts with differing science, R&D, commercial or other goals. In short, the situation on the ISS will be considerably more complex than that involving the HST.

In light of all that, what has NASA done about an NGO? First, we have drafted a reference model for an NGO that would manage the U.S. share of ISS resources.[56] Second, we have enlisted the help of the National Research Council which has convened a task group to study various NGO options. In addition, we have an internal trade study underway that will examine the statutory and regulatory constraints that would apply to the various implementation methods to identify their respective advantages and disadvantages. The current hope is that by the end of the year, NASA will be ready with some specific recommendations that can be discussed and debated with all interested parties.

That is about it. To summarize, we in NASA are very committed to an aggressive and innovative commercial utilization approach for the U.S. share of ISS resources. This approach is totally consistent with the programmatic scheme that is described in detail in the ISS documents. Commercial usage of the ISS is, as stated by the U. S. Congress in the Commercial Space Act of 1998, "a priority goal of constructing the International Space Station."[57] Flowing through the IGA, the MOUs, and all management mechanisms are the tools necessary to conduct commercial activity on the ISS and to protect the intellectual property and proprietary information that is produced or used on, or in transit to, the Station. Now, all we have to do is find the users needed to fill the 30% share of the U.S. resource allocation that has been earmarked for commercial activity. To do that, NASA has issued numerous documents and reports describing its intentions and is in active negotiations with several potential commercial partners. In addition, we have created a streamlined process for

[55] IGA, Article 9.4

[56] Commercial Development Plan for the International Space Station, Attachment 3, November 16, 1998.

[57] P.L. 105-303, Section 101(a).

consideration of new proposals, and have prepared informative materials to help address that most sensitive of issues, intellectual property. We are actively exploring better and less bureaucratic ways of managing the U. S. resources, including spinning off the entire management effort to a non-governmental organization. And finally, we have prepared and submitted to Congress an innovative legislative package aimed at encouraging, facilitating, and expanding commercial uses of the ISS.

The time is right for these efforts. As I stated at the outset, the Service Module is now scheduled for launch in the near future. The U.S. laboratory will be ready for launch next year, and sometime before it arrives, the first crew will go to the ISS to begin its permanently inhabited operations. This really is an exciting time to be involved with the ISS program. No matter what happens, the envelope of human experience is about to get bigger. We at NASA hope that it will expand to the point where it will nurture a entirely new commercial space industry that will benefit the vast majority of us who will stay on the ground while our eyes are on the heavens. This will happen, only the time scale is still in doubt. We at NASA are doing what we can to identify and work with those who agree with us that sooner is much better than later.